



258545



November 10, 2005

Mr. Nabil S. Fayoumi
U. S. EPA - Region 5
77 West Jackson Boulevard (SR-6J)
Chicago, Illinois 60604-3590

**Re: Sauget Area 2 Site – October 3, 2002 Unilateral Administrative Order (UAO) Groundwater Operable Unit
Monthly Report; October 1 - October 31, 2005 Reporting Period**

Dear Nabil:

Attached is the Monthly Report for the Sauget Area 2 Site October 3, 2002 Unilateral Administrative Order (UAO) - Groundwater Operable Unit. This submittal is in fulfillment of the monthly reporting requirements of the UAO, Section XII, paragraph 62, Progress Reports. This report is for the period October 1 – October 31, 2005.

Sincerely,

Steven D. Smith
Project Coordinator

cc: Ken Bardo, - U. S. EPA
Mayor Sauget - Sauget, IL
Sandra Bron – IEPA
Mike Coffey - USFWS
Village of Sauget – c/o P. H. Weis & Associates (Attn: Brian Nelson)
Mayor Frank Bergman – Cahokia
L. Glen Kurowski - Monsanto
Cathleen Bumb – Solutia
Linda Tape - Husch & Eppenberger
Richard Williams – Solutia

Sauget Area 2 Site - Sauget, Illinois

October 3, 2002 UAO – Groundwater Operable Unit

Status Report

Date of Report: November 10, 2005
Period Covered: October 1 - October 31, 2005

Agency Actions / Communications

In an e-mail message dated June 19, 2003, U. S. EPA requested the submission of revised versions of the Focused Feasibility Study, the Remedial Design Work Plan, and the Pre-Final (95%) Remedial Design. The revisions were required to allow the use of a slurry wall rather than jet grouting for construction of the barrier wall. The revised documents were submitted on July 3, 2003. The ESD was issued by US EPA on July 30, 2003. The Final Design Submittals were approved by EPA on October 16, 2003.

Work Performed During the Reporting Period

General Site Work

- The Pre-Final Inspection was conducted on June 28, 2005. The only item that was identified as requiring completion before the Final Inspection was a pressure test on the discharge pipeline. That test was successfully completed on July 14th. On July 19th, the Agency was requested by e-mail to complete a Final Inspection and issue a Construction Complete notice. The Agency responded on August 30th requesting the submission of a Technical Memorandum comparing the historical groundwater discharges at the P-Chem Plant with the flow rates from the individual extraction wells. The comparison was intended to be used to determine the appropriate percentage flow difference that should trigger an alarm signaling a problem with the GMCS during system operation. That comparison was submitted on September 12th.
- Comments on the Operations and Maintenance Plan that was submitted to the Agency on June 21, 2005 were received on September 20th. Those comments are being reviewed and responses will be prepared and submitted.

Groundwater Treatment

- The second Interim Operating Period began on August 1,, 2005 and continued through October 31st. For the entire month of October, the system was operated to maintain the total pumping rate equal to the computed inflow rate, based on the average of the gradients measured in four pairs of piezometers placed immediately upgradient of the Site R landfill.
- During the reporting period, the control system was reprogrammed at intervals to change the relative flow rates of the individual wells, while maintaining the total outflow equal to the computed inflow. Between October 1st and October 3rd, all three wells pumped at the same flow rate. On October 4th the controller was reprogrammed so that EW-1 and EW-3 pumped twice the volume of groundwater as EW-2. That control scheme was maintained until October 13th, when the control system was again changed so that EW-2 was shut down and the entire flow was equally shared between wells EW-1 and EW-3.. The control system was again reset on October 23 so that the flow rates in wells EW-1 and EW-2 were twice the flow rate in EW-3. The individual well flow rates were varied in an effort to investigate the system responses to differing flow conditions.
- The system was shut down on October 13th at the request of American Bottoms. It is understood that the treatment facility needed to reduce the load on the activated sludge beds to allow nitrification. This was successful on October 17th and the system was restart with unrestricted flow on that day.
- On October 20th, a voltage spike tripped the circuit breakers on the pump on extraction well EW-2 and the well was shut down until it could be manually restarted on October 21st. Similarly, a power failure shut the system down for several hours on October 28th.
- A leak was discovered in well EW-1 on October 29th. The system was shut down while the well was isolated and was restarted on that same day. The soil around the well casing was excavated on October 31st and it was apparent that the leakage occurred through several holes that had been eroded in the pitless adapter. The adapter will be changed. While the pump was out of the well, it was inspected for wear and, based on this inspection, it was decided to change all of the well pumps.
- Because of frequent tripping of the circuit breaker on well EW-1, the power supply to this well was monitored. Several low voltage spikes were detected in the supply, but no overvoltage spikes sufficient to trip the breaker were noted. The power line was checked for continuity and this suggested that the line was grounding to earth under some conditions. Consequently, the supply line was replaced on October 31st.
- The results for the first quarter groundwater samples of the performance monitoring wells are being validated. However, the unvalidated results were submitted to the Agency on October 27th. The second quarter groundwater samples, as well as the first semiannual sediment and surface water samples, were being analyzed during the reporting period.

- Water level and pumping data for the month of October are attached.

Schedule

The Agency is currently reviewing various submissions to determine if construction is complete.

Submittals During Reporting Period

The unvalidated groundwater monitoring data from the performance monitoring wells were submitted during the reporting period.

Work Scheduled for Next Reporting Period

- Continue pumping and treating groundwater using the new control program.
- Replace the pitless adapter on well EW-1.
- Check the condition of the pitless adapter on well EW-2.
- Replace all three pumps in the groundwater extraction wells.
- Complete validation of the results of the first quarter groundwater samples from the performance monitoring wells.
- Complete the analyses of the second quarter groundwater samples from the performance monitoring wells and the first semiannual sediment and surface water samples.

PUMPING DATA

		PUMPING RATE					GROUNDWATER LEVELS							
		Computed					SWL							
Date/Time		Q	Total Q	EW-1 Q	EW-2 Q	EW-3 Q		PZ-5U	PZ-5D	Delta	PZ-6U	PZ-6D	Delta	PZ-7U
10/01/2005	Daily Average	507.82	507.62	169.22	169.19	169.21	383.65	386.78	386.30	-0.47	386.50	386.46	-0.04	386.68
10/02/2005	Daily Average	542.33	540.91	180.32	180.29	180.30	382.78	386.75	386.21	-0.54	386.48	386.44	-0.04	386.66
10/03/2005	Daily Average	580.87	580.77	193.58	193.60	193.58	382.33	386.69	386.10	-0.59	386.44	386.38	-0.06	386.62
10/04/2005	Daily Average	572.59	573.05	202.24	168.59	202.23	382.71	386.69	386.13	-0.56	386.44	386.38	-0.06	386.63
10/05/2005	Daily Average	561.76	562.48	210.93	140.63	210.92	383.16	386.70	386.20	-0.50	386.49	386.40	-0.09	386.67
10/06/2005	Daily Average	461.37	467.52	175.32	116.91	175.29	385.94	386.85	386.47	-0.38	386.60	386.54	-0.07	386.72
10/07/2005	Daily Average	230.48	199.09	96.07	7.10	95.92	390.06	387.21	387.19	-0.02	386.96	386.98	0.02	387.05
10/08/2005	Daily Average	231.10	183.03	91.53	0.00	91.50	388.56	387.45	387.37	-0.08	387.16	387.16	0.00	387.29
10/09/2005	Daily Average	316.79	290.18	117.95	54.23	117.99	386.57	387.46	387.26	-0.20	387.21	387.20	-0.01	387.37
10/10/2005	Daily Average	372.48	384.90	144.42	96.23	144.25	385.62	371.33	387.19	15.86	387.20	387.15	-0.05	387.34
10/11/2005	Daily Average	421.14	421.47	158.05	105.39	158.03	385.18	387.49	387.13	-0.35	387.23	387.14	-0.09	387.31
10/12/2005	Daily Average	433.11	433.11	193.16	46.87	193.08	384.77	387.49	387.11	-0.38	387.23	387.14	-0.09	387.31
10/13/2005	Daily Average	453.27	316.36	158.35	0.00	158.00	384.51	387.49	387.07	-0.42	387.26	387.19	-0.06	387.36
10/14/2005	Daily Average	414.86	0.00	0.00	0.00	0.00	384.66	387.64	387.25	-0.39	387.49	387.48	0.00	387.54
10/15/2005	Daily Average	396.67	0.00	0.00	0.00	0.00	385.22	387.67	387.35	-0.32	387.55	387.60	0.04	387.69
10/16/2005	Daily Average	403.53	0.00	0.00	0.00	0.00	385.31	387.81	387.44	-0.37	387.67	387.65	-0.02	387.79
10/17/2005	Daily Average	426.25	191.28	95.65	0.05	95.58	385.07	387.79	387.45	-0.34	387.67	387.67	0.01	387.87
10/18/2005	Daily Average	472.88	472.57	236.30	0.00	236.28	385.50	387.69	387.31	-0.38	387.49	387.43	-0.05	387.69
10/19/2005	Daily Average	474.06	474.00	236.99	0.00	237.01	385.46	387.68	387.34	-0.34	387.53	387.40	-0.12	387.68
10/20/2005	Daily Average	446.58	432.30	184.47	24.09	223.74	385.40	387.74	387.40	-0.34	387.56	387.46	-0.10	387.68
10/21/2005	Daily Average	398.90	413.30	126.49	80.34	206.47	385.79	387.81	371.33	-16.49	387.53	387.51	-0.02	387.66
10/22/2005	Daily Average	398.56	399.38	199.71	0.00	199.67	385.68	387.84	387.49	-0.35	387.57	387.54	-0.03	387.73
10/23/2005	Daily Average	423.29	421.20	196.58	56.00	168.62	385.28	387.82	387.44	-0.37	387.57	387.50	-0.07	387.70
10/24/2005	Daily Average	469.54	468.81	187.55	187.51	93.75	384.72	387.68	387.31	-0.37	387.47	387.35	-0.12	387.62
10/25/2005	Daily Average	488.47	488.59	195.44	195.42	97.73	384.02	387.64	387.12	-0.51	387.37	387.33	-0.04	387.56
10/26/2005	Daily Average	499.86	498.27	199.32	199.29	99.65	383.61	387.52	387.02	-0.50	387.26	387.23	-0.03	387.50
10/27/2005	Daily Average	596.76	594.51	237.80	237.78	118.93	382.63	387.29	386.72	-0.57	387.09	386.97	-0.12	387.35
10/28/2005	Daily Average	634.33	583.07	237.88	236.41	118.63	382.37	387.16	386.56	-0.61	386.99	386.84	-0.15	387.22
10/29/2005	Daily Average	632.21	512.01	158.56	218.06	135.39	381.70	387.16	386.51	-0.65	386.97	386.85	-0.12	387.18
10/30/2005	Daily Average	681.11	679.76	0.15	339.81	339.80	380.07	387.01	386.30	-0.71	386.88	386.79	-0.09	386.98
10/31/2005	Daily Average	715.01	714.08	0.00	357.03	357.05	379.67	386.92	386.13	-0.80	386.76	386.71	-0.05	386.84

Date/Time		PZ-7D	Delta	PZ-8U	PZ-8D	Delta	PZ-1_OUTSI DE	PZ-1_INSIDE	PZ-2_OUTSI DE	PZ-2_INSIDE	PZ-3_OUTSI DE	PZ-3_INSIDE	PZ-4_OUTSI DE	PZ-4_INSIDE
10/01/2005	Daily Average	386.13	-0.55	386.63	385.84	-0.79	384.13	384.90	382.60	385.27	383.23	384.95	384.07	384.77
10/02/2005	Daily Average	386.10	-0.57	386.58	385.72	-0.86	380.24	384.82	381.79	385.20	382.48	384.85	383.66	384.68
10/03/2005	Daily Average	386.04	-0.57	386.52	385.58	-0.94	382.09	384.71	381.36	385.06	382.07	384.70	383.39	384.53
10/04/2005	Daily Average	386.06	-0.57	386.54	385.60	-0.93	383.61	384.70	381.70	385.09	382.35	384.75	383.53	384.53
10/05/2005	Daily Average	386.11	-0.56	386.60	385.69	-0.91	383.78	384.68	382.09	385.16	382.74	384.85	383.75	384.57
10/06/2005	Daily Average	386.20	-0.52	386.69	386.02	-0.67	384.91	384.97	384.43	385.41	384.84	385.12	384.91	384.85
10/07/2005	Daily Average	386.62	-0.43	387.12	386.90	-0.22	387.47	385.90	388.41	386.31	388.69	386.14	387.12	385.77
10/08/2005	Daily Average	386.86	-0.43	387.35	387.14	-0.21	387.10	386.26	387.26	386.60	387.67	386.46	386.87	386.04
10/09/2005	Daily Average	386.90	-0.48	387.38	387.01	-0.38	385.80	386.14	385.43	386.48	385.96	386.27	386.03	385.93
10/10/2005	Daily Average	386.86	-0.48	387.35	386.80	-0.55	385.65	385.88	384.52	386.29	385.09	386.04	385.53	385.72
10/11/2005	Daily Average	386.87	-0.44	387.36	386.73	-0.63	385.39	385.79	384.11	386.24	384.70	385.97	385.29	385.65
10/12/2005	Daily Average	386.86	-0.45	387.32	386.68	-0.64	385.18	385.70	383.72	386.24	384.34	385.99	385.07	385.54
10/13/2005	Daily Average	386.90	-0.46	387.32	386.62	-0.70	385.06	385.80	383.48	386.38	384.14	386.16	384.91	385.60
10/14/2005	Daily Average	387.15	-0.39	387.49	386.71	-0.78	385.16	386.89	383.63	387.12	384.29	386.92	385.03	386.43
10/15/2005	Daily Average	387.27	-0.42	387.61	386.88	-0.73	385.48	387.07	384.15	387.28	384.79	387.08	385.34	386.60
10/16/2005	Daily Average	387.38	-0.40	387.69	386.98	-0.70	385.60	387.16	384.29	387.36	384.93	387.21	385.48	386.72
10/17/2005	Daily Average	387.40	-0.46	387.74	387.01	-0.73	385.51	386.86	384.07	387.19	384.70	387.06	385.39	386.52
10/18/2005	Daily Average	387.14	-0.56	387.59	386.90	-0.69	385.34	385.91	384.44	386.49	385.01	386.29	385.50	385.78
10/19/2005	Daily Average	387.15	-0.53	387.59	386.93	-0.66	385.67	385.90	384.45	386.50	385.03	386.26	385.52	385.74
10/20/2005	Daily Average	387.19	-0.49	387.60	386.97	-0.63	385.67	386.12	384.40	386.63	385.00	386.30	385.50	385.81
10/21/2005	Daily Average	387.15	-0.51	387.58	386.99	-0.59	385.88	386.39	384.75	386.67	385.34	386.20	385.69	385.76
10/22/2005	Daily Average	387.24	-0.49	387.63	387.09	-0.54	385.87	386.16	384.71	386.69	385.30	386.47	385.72	385.95
10/23/2005	Daily Average	387.23	-0.47	387.63	387.04	-0.60	385.38	386.11	384.34	386.58	384.95	386.41	385.55	385.98
10/24/2005	Daily Average	387.14	-0.48	387.63	386.92	-0.71	385.09	385.94	383.86	386.25	384.49	386.21	385.27	386.09
10/25/2005	Daily Average	387.09	-0.47	387.54	386.73	-0.81	384.50	385.76	383.18	386.16	383.86	386.07	384.88	385.98
10/26/2005	Daily Average	386.99	-0.51	387.42	386.60	-0.82	383.34	385.66	382.74	386.03	383.43	385.95	384.60	385.86
10/27/2005	Daily Average	386.77	-0.58	387.23	386.31	-0.92	384.01	385.23	381.74	385.65	382.47	385.61	383.99	385.54
10/28/2005	Daily Average	386.64	-0.57	387.11	386.11	-1.00	383.72	385.04	381.48	385.49	382.20	385.44	383.77	385.39
10/29/2005	Daily Average	386.62	-0.56	387.03	386.00	-1.03	382.21	385.32	380.90	385.68	381.68	385.40	383.45	385.29
10/30/2005	Daily Average	386.37	-0.61	386.73	385.57	-1.16	382.64	385.96	379.40	385.73	380.25	384.52	382.58	384.34
10/31/2005	Daily Average	386.20	-0.63	386.53	385.30	-1.22	382.31	385.77	378.98	385.52	379.84	384.28	382.22	384.03